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DELAWARE RIVER GAMM TAYLOR CREEK, PIKE COUNTY

PENNSYLVANIA

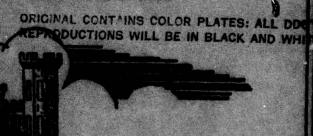


TAYLOR POND DAM

NDI - PA 00315 PA DER 52-152 SCS - PA-446 LEVER

PHASE I INSPECTION REPORT

NATIONAL DAM INSPECTION PROGRAM



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Justin & Courtney Division
PHILADELPHIA, PENNSYLYANIA
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DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT CORPS OF ENGINEERS
BALTIMORE, MARYLAND
21203

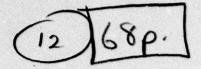
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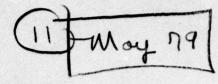
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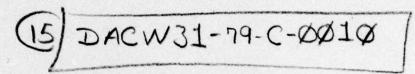


#### **DELAWARE RIVER BASIN**

Name of Dam: Taylor Pond Dam

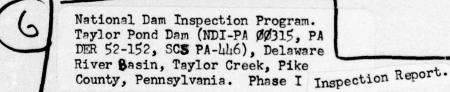
County and State: Pike and Monroe Counties, Pennsylvania

Inventory Number: PA 00315



#### PHASE I INSPECTION REPORT

#### NATIONAL DAM INSPECTION PROGRAM



#### Prepared by:

O'BRIEN & GERE ENGINEERS, INC. JUSTIN & COURTNEY DIVISION

For:

DEPARTMENT OF THE ARMY Baltimore District, Corps of Engineers Baltimore, Maryland 21203

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#### PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigations, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected, and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the spillway design flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. The spillway design flood provides a measure of relative spillway capacity and serves as an aid in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream demage potential.

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#### PHASE I REPORT

#### NATIONAL DAM INSPECTION PROGRAM

Name of Dam: State Located: County Located: Stream: Coordinates: Date of Inspection:

Taylor Pond Dam - ID # PA 00315 Pennsylvania Pike and Monroe Counties Taylor Latitude 41<sup>0</sup> 14.5', Longitude 75<sup>0</sup> 20.2' December 5, 1978

#### **ASSESSMENT**

Taylor Pond Dam is a zoned compacted earth and rockfill embankment. The dam is approximately 2,300 feet long and 76 feet high at its maximum section. The level of the reservoir is controlled by means of a single stage, drop inlet, closed conduit spillway (Principal Spillway). A grass covered spillway (Emergency Spillway) is located at the right abutment (looking downstream). The primary purpose of the structure is flood control.

Examination of the results of the hydrologic and hydraulic analyses indicates that the spillway system (Principal & Emergency Spillway) is capable of passing the entire Probable Maximum Flood (PMF) without the dam being overtopped. Therefore, the spillway system is classified as "Adequate". The Spillway Design Flood (SDF) for this "High" hazard structure is the PMF.

Based on visual observations and review of the information obtained from the Pennsylvania Department of Environmental Resources, Taylor Pond Dam appears to be in good condition. However, certain items require attention:

- The trees and brush growing on the rockfill face of the compacted earth and rockfill embankment slopes should be removed.
- Low areas along the top of dam should be filled with suitable material in order to restore the surface to design elevation. After this is completed, the top of dam should be monitored on a monthly basis to check for possible differential settlement.
- 3. A maintenance program, independent of the yearly inspection reports, should be developed and implemented. This program should include, but not be limited to, cutting of the brush and trees on a regular basis and periodic inspection and operation of the sluice gate.

A warning system should be developed. During periods of heavy rainfall, the dam should be monitored and downstream residents alerted in the event of an impending failure.

O'BRIEN & GERE ENGINEERS, INC. JUSTIN & COURTNEY DIVISION

Vice-President

Pennsylvania Registration #6926

June 8, 1979

ENGINEER

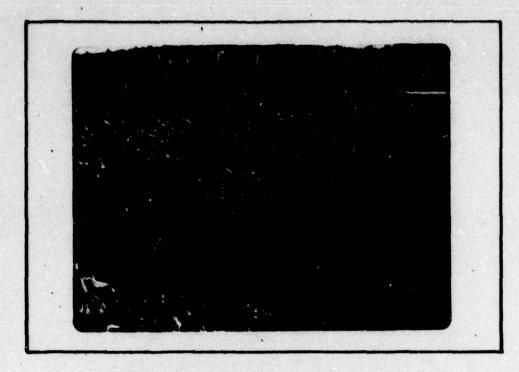
Approved By

JAMES W. PECK

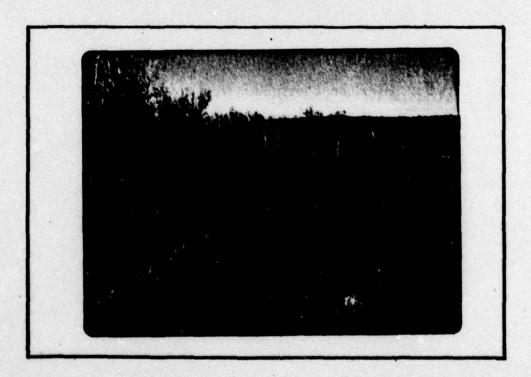
Colonel, Corps of Engineers

District Engineer

Date: 16 July 1979



UPSTREAM FACE OF THE DAM LOOKING TOWARDS THE RIGHT ABUTMENT



DOWNSTREAM FACE OF THE DAM LOOKING TOWARDS THE RIGHT ABUTMENT

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## PHASE I REPORT NATIONAL DAM INSPECTION PROGRAM TAYLOR POND DAM NDI I.D. NO. 00315 DER # 52-152

#### SECTION 1

#### PROJECT INFORMATION

#### 1.1 General

- a. <u>Authority</u>. The Dam Inspection Act, Public Law 92-367, authorized the Secretary of the Army, through the Corps of Engineers, to initiate a program of inspection of dams throughout the United States.
- b. Purpose. The purpose of this inspection is to evaluate the structural and hydraulic conditions at Taylor Pond Dam, and to determine if the dam constitutes a hazard to human life or property.
- 1.2 Description of Project (Supplemented by information obtained from the Pennsylvania Department of Environmental Resources (DER), Division of Dam Safety, Harrisburg, Pennsylvania, and the Soil Conservation Service (SCS) State Office, Harrisburg, Pennsylvania.)
  - Dam and Appurtenances. Taylor Pond Dam is a zoned earth and rockfill embankment, approximately 2,300 feet in length with a maximum height of 76 feet. The embankment is constructed with a change in alignment (78 degree bend) to the right, starting approximately 1,100 feet from the left abutment. The top of the dam is 22 feet wide at design Elevation 1829. The embankment side slopes are 2 horizontal to 1 vertical (2H:1V) both upstream and downstream.

According to the as-built plans, the embankment is constructed in three zones. A central impervious core to Elevation 1821 and a cutoff trench extending to 22 feet below natural ground are composed of silt (ML) and clay (CL) materials (Zone 1). The core side slopes are 0.4H:1V and the top width is 10 feet. The cutoff trench has 1H:1V side slopes and a 10 foot bottom width. Zone 2 material is an intermediate layer between the core and the shell and consists of silty sand (SM), silty gravel (GM), and cobbles from the designated borrow areas. Zone 2 extends to Elevation 1827 with a top width of 20 feet and side slopes which are slightly steeper than 2H:1V. Zone 3 material, which forms the upstream and downstream shells, is composed of rocks larger than 6 inches

cont.

ADSTRACT

obtained from the Emergency Spillway excavation and oversize material raked out of Zone 1 and Zone 2 material. A 15-foot wide berm composed of Zone 3 material is also provided along the upstream toe between stations 10+00 and 15+55. Another 15-foot wide berm is provided along the downstream toe between stations 12+15 and 17+36. A filter trench of variable depth underlies the upstream portion of the downstream toe berm and a filter blanket protects the upstream side of the filter trench and the downstream portion of the base of Zone 2.

According to the as-built plans, the Principal Spillway consists of a reinforced concrete riser, a prestressed reinforced concrete pipe, and a stilling basin excavated into bedrock. The riser crest is at Elevation 1785.0 (the 50 year sedimentation level). At this level, flow occurs over two 8-foot long sidewall weirs. A reinforced concrete gate-well on the upstream side of the riser houses a sluice gate which is used to regulate flow from a 30-inch diameter pond drain pipe into the base of the riser. The 36-inch diameter, prestressed reinforced concrete pipe rests on a reinforced concrete cradle. Seven reinforced concrete anti-seep collars (9 feet by 13 feet) are spaced at 22- to 24-foot intervals along the pipe. The stilling basin at the outlet of the pipe is excavated into bedrock with a bottom approximately 20 feet long and 12 feet wide at Elevation 1744.5. The side slopes of the stilling basin are 1H:1V in rock and 2H:1V above the rock surface. Immediately downstream of the stilling basin is a trapezoidal shaped outlet channel with a bottom width of 12 feet and 2H:1V side slopes. The outlet channel merges with the natural channel about 200 feet downstream of the stilling basin.

The Emergency Spillway, which is located in the right abutment, is a 250-foot wide trapezoidal channel with 2H:1V side slopes. It has a 30-foot long level section, at Elevation 1821.6, located just downstream from the centerline of the dam. The forebay channel, about 320 feet in length, slopes upward to the level section on a 1 percent grade. The exit channel slopes away from the level section on a 2.3 percent grade for about 550 feet before blending in with natural ground. A compacted earth dike (300 feet long) acts as a barrier between the Emergency Spillway and the earth embankment to prevent spillway flow from damaging the downstream face of the earth embankment.

- b. Location. Taylor Pond Dam is located on Taylor Creek, approximately 6 miles northwest of Canadensis, Pennsylvania, and about 24 miles southeast of Scranton, Pennsylvania. The dam lies across the Pike and Monroe County border, within Greene Township on the Pike County side and within Coolbaugh Township on the Monroe County side. The dam is shown on the USGS Quadrangle, entitled "Buck Hill Falls, Pennsylvania", at coordinates N 41 14.5, W 75 20.2. A regional location plan of Taylor Pond Dam is enclosed as Plate 1, Appendix E.
- c. Size Classification. Taylor Pond Dam has a maximum height of 76.0 feet and a top of dam storage capacity of 1390 acre-feet. This places it in the "Intermediate" size category.

- Hazard Classification. A dam failure could result in loss of lives and extensive property damage in the downstream town of La Anna. Therefore, the dam is classified as "High" hazard.
- Ownership. Taylor Pond Dam is owned by the Pike County Commissioners, County Courthouse, Milford, Pennsylvania, 18337.
- Purpose of Dam. The dam functions as a floodwater control structure.
- g. Design and Construction History. Taylor Pond Dam was designed by the engineering staff of the Soil Conservation Service (SCS) of the United States Department of Agriculture and was constructed by C. Davis, Inc., of Conshohocken, Pennsylvania. Construction began in March of 1962 and was completed in July of 1963. There is no record of subsequent modifications to the structure.
- Normal Operating Procedures. For this type of structure, the reservoir is normally maintained at the crest of the Principal Spillway, Elevation 1785.0. The pond drain provided at the base of the riser allows for drawdown of the reservoir. The sluice gate which controls the pond drain is the only operating device in the dam. During the annual inspection of Taylor Pond Dam by SCS in 1968, it was recommended that the sluice gate be operated on a yearly basis.

#### Pertinent Data

8.	Dra	inage	Area

b.	Discharge at Dam Site (cfs)	
	Drop Inlet Closed Conduit Spillway Capacity (reservoir surface at the earth and rock cut spillway crest, Elev. 1821.6)	200
	Maximum Combined Spillway Capacity	14,580
c.	Elevation (feet above MSL)	
	Bond Deale July	

4.80

Square miles

Pond Drain Inlet	1768.35
Principal Spillway Crest	1785.0
(50-year sedimentation level) Emergency Spillway Crest	1821.6
Top of Dam (Design)	1829,0
Top of Dam Low Point	1828.7
Principal Spillway Pipe Invert (inlet)	1757.5
Principal Spillway Pipe Invert (outlet)	1754.6
Streambed Elevation at Centerline	1756.0

#### Reservoir (miles)

Length of Normal Pool	0.24
Length of Maximum Non-overtopping Pool	0.71

#### Storage (acre-ft.)

Normal Pool (sedimentation storage),	Elev. 1785.0	51.0
, in the contract of the contr	Trott Tiesto	27.0

	Emergency Spillway Cre Elev. 1821.6	est (100-year storm), 927.6
	Top of Dam, Elev. 1829	.0
f.	Reservoir Surface Area (acre	<u>es)</u>
	Normal Pool, Elev. 1785 Emergency Spillway Cre Top of Dam, Elev. 1829	est, Elev. 1821.6 53.4
<b>g.</b>	Dam Data	
	Type Length Height Crest Width Side Slopes Zoning Impervious Core  Cutoff Grout Curtain	Compacted Earth and Rockfill 2,300 feet 76.0 feet 22 feet 2H:1V (Upstream and Downstream) Yes, refer to Section 1.2.a A central core of relatively impervious silt (ML) and clay (CL). A cutoff trench of core material
h.	Spillways	
	1. Principal	
	Type Length of Weir Crest Elevation Gates  Upstream Channel Downstream Channe	Drop inlet closed conduit 16 feet 1785.0 30-inch diameter on the up- stream end wall of the riser, invert Elev. 1758.0 None A rock and riprap lined trape- zoidal stilling basin outlets into
		a trapezoidal outlet channel which outlets into the original streambed.
	2. Emergency	
	Type Width Crest Elevation Gates	Vegetated earth cut 250 feet 1821.6 None
	Upstream channel	A curved channel about 320 feet in length slopes upward to the level section on a 1 percent grade.
	Downstream Channe	

#### **ENGINEERING DATA**

#### 2.1 Design

- a. <u>Data Available</u>. The information available in the DER main office files in Harrisburg, Pennsylvania, concerning Taylor Pond Dam includes the following:
  - Application, Report Upon the Application, and Permit to construct Taylor Pond Dam.
  - 2) Set of design drawings, including location and contour maps.
  - 3) Yearly inspection reports for 1968 and 1970 through 1977.
  - 4) Construction progress reports and photographs.
  - 5) Miscellaneous correspondence and memoranda.

Additional information obtained from the SCS State Office, Harrisburg, Pennsylvania, includes a complete set of As-Built Plans and a complete set of design calculations.

b. Design Features. The design features are described in Section 1.2.a and shown on the plates in Appendix E.

#### 2.2 Construction

Based on the field investigation and the information available in the construction reports, the dam appears to have been constructed in general conformance with the design drawings.

#### 2.3 Operation

Operational procedures are limited to the control of the sluice gate for the reservoir drain system.

#### 2.4 Evaluation

- a. Availability. The engineering data utilized in this report were provided by DER and SCS.
- b. Adequacy. The material provided by DER and SCS is adequate for a Phase I investigation.
- c. Validity. There is no reason to question the validity of the data available from DER and SCS

#### VISUAL INSPECTION

#### 3.1 Findings

- a. General. The field inspection of Taylor Pond Dam took place on December 5, 1978. At the time of the inspection, the reservoir surface was slightly above the spillway crest, Elevation 1785.0. No underwater areas were inspected. The observations and comments of the field inspection team are in the checklist which is Appendix B of this report. The appearance of the facility indicates that the dam and its appurtenances are fairly well maintained.
- b. Dam. The upstream and downstream faces of the embankment are composed of 6-inch to 3-foot rocks, which appear to be well-graded. Minor undulations are apparent along both the upstream and downstream faces, which may be due to the variable size of the rock. The upstream and downstream rock embankment slopes show no visible sign of instability.

On the date of the inspection, brush and small trees with trunks as thick as 6 inches in diameter were observed growing on both faces of the embankment.

Larger trees are located immediately upstream of the dam, toward the left abutment. These trees are 40 to 50 feet in height and are founded on natural ground, a few feet above the reservoir surface.

During the inspection, running water was observed along the downstream toe from the left abutment to the drop inlet closed conduit spillway outlet channel. This flowing water appears to be surface runoff, as the natural ground downstream of the dam slopes toward the embankment, creating a channel along the downstream toe. In the area of the change in alignment of the dam, some standing water was observed. Several localized areas of standing water along the top of the dam were also noted during the inspection.

c. Appurtenant Structures. The Principal Spillway appears to be in good operating condition. At the time of the inspection, approximately 20 cfs. was discharging from the spillway pipe. The owner was not available during the day of inspection to operate the hoist for the pond drain sluice gate.

The Emergency Spillway also appears to be in good condition. The grass cover is adequate and the slopes show no signs of instability. The earth dike which separates the embankment from the earth and rock cut

spillway extends aproximately 550 feet downstream and appears to provide adequate protection for the downstream face of the embankment from flow through the Emergency Spillway.

- d. Reservoir Area. The reservoir side slopes average about 10 percent and are well vegetated. There is no visible evidence of slope instability or excess siltation.
- e. Downstream Channel. Flow from the Principal Spillway enters a trapezoidal riprap lined stilling basin which outlets into an unlined, trapezoidal channel. The excavated trapezoidal channel terminates at the natural stream channel of Taylor Creek about 200 feet downstream of the dam. Taylor Creek flows through the town of La Anna about a half-mile downstream of the dam. There are approximately 4 homes and 20 people that would be affected at the damage center in the event the dam would fail.

#### **OPERATIONAL PROCEDURES**

#### 4.1 Procedures

Drawdown of the reservoir may be accomplished by operating the sluice gate for the pond drain. The hoist for the sluice gate is located on the top slab of the riser. There are no other known operational features for the dam.

#### 4.2 Maintenance of the Dam

Annual inspection reports by SC5 are available in the DER files for 1968 and 1970 through 1977. Maintenance of the dam is performed in accordance with requirements specified in these yearly reports. In general, the required maintenance has consisted of cutting the grass, removal of debris from the spillway areas, and cutting of the trees and brush. It is not known if inspections were performed prior to 1968 or in 1969.

#### 4.3 Maintenance of Operating Facilities

According to the DER records, sluice gate repairs were performed in 1971 and 1976 as recommended in the yearly inspection reports. A report dated February 23, 1978, stated that the gate was again in need of repair. The 1968 inspection report recommended that the gate be operated annually.

#### 4.4 Warning Systems in Effect

There is no formal warning system or procedures to be followed during periods of heavy rainfall.

#### 4.5 Evaluation

The brush and trees growing in the embankment indicate a need for additional maintenance. A maintenance program independent of the yearly inspection reports would probably be more efficient.

The dam is accessible under all weather conditions for inspection and emergency action.

#### HYDRAULICS AND HYDROLOGY

#### 5.1 Evaluation of Features

a. Design Data. The complete hydrologic and hydraulic design was obtained from SCS. Refer to Sheet 10 in Appendix C for the SCS hydraulic and hydrologic design summary.

Taylor Pond Dam has a drainage area of 4.80 square miles and impounds a reservoir with a floodwater retardation storage capacity of 927.6 acrefeet. The combined spillway system has a maximum discharge capacity of 14,580 cfs. The Principal Spillway crest was originally designed as a 3-foot by 9-foot section, but was constructed as a 3-foot by 8-foot section. Therefore, the hydraulic capacity is reduced by an insignificant amount (see calculation, Appendix C).

- b. Experience Data. There are no known reservoir level records or rainfall records kept for this dam. According to Mr. Frank Razny, Pike County Dam Inspector, the maximum reservoir surface elevation that he has observed is about 2 feet below the emergency spillway crest (about Elevation 1819.6).
- c. <u>Visual Observations</u>. On the date of the inspection, there were no adverse conditions that would prevent either spillway from operating as designed. Further observations are given in Appendix B.
- d. Overtopping Potential. The Spillway Design Flood for an Intermediate size, "High" hazard structure is the full PMF. The corresponding peak inflow and outflow rates are 10,310 cfs. and 10,110 cfs. respectively. Based on the hydrologic analysis, the combined spillway system is capable of discharging 100 percent of the PMF without overtopping of the embankment (see Appendix C for computations).
- e. Spillway Adequacy. The Taylor Pond Dam spillway system is classified as adequate.

#### STRUCTURAL STABILITY

#### 6.1 Evaluation of Structural Stability

a. Visual Observations. Some minor deterioration of the rockfill is evident on both faces of the embankment, however, the integrity of the structure does not appear to have been affected. There are no visible signs of erosion or slope instability.

Several small areas of standing water are located along the top of the dam. Although these areas could be the result of differential settlement, it is more likely that they are the result of poor drainage or surface irregularities formed by maintenance vehicles. (See profile of the top of the dam in Appendix E.)

Many trees with trunks up to 6 inches in diameter are growing on the slopes of the embankment. The roots of these trees create potential seepage paths. In the event of a tree being blown down, a portion of the embankment might be removed.

The structural features of the Principal Spillway appear to be in good condition. There is no evidence of cracking or spalling of the concrete in the riser or in the outlet pipe. The stilling basin also appears to be in satisfactory condition with no visible signs of slope instability or misplaced riprap.

- b. Design and Construction Data. As-built plans and the complete design folder were obtained from SCS. This material along with the information obtained from DER are sufficient for a Phase I analysis. Slope stability analysis results showing adequate factors of safety are included in the SCS design data.
- c. Operating Records. There are no official operating records maintained for this dam.
- d. Post-Construction Changes. There is no record of any structural changes made on the dam subsequent to the completion of construction.
- e. Seismic Stability. Taylor Pond Dam is located in Seismic Zone 1 on the Seismic Zone Map of Contiguous States. A dam located in Seismic Zone 1 is generally considered to be safe under any expected Zone 1 earthquake loading conditions if it is safe under static loading conditions.

#### ASSESSMENT, RECOMMENDATIONS, AND PROPOSED REMEDIAL MEASURES

#### 7.1 Dam Assessment

a. Evaluation. Based on the visual inspection, the dam and appurtenant structures are considered to be in good condition.

Trees on the rockfill embankment slopes represent potential problem areas and should be removed. However, the rockfill embankment slopes show no visible signs of instability or surface erosion.

The standing water that is evident along the top of the dam is an indication that the top of the dam is not properly graded in localized areas, or that localized surface irregularities are caused by maintenance vehicles. However, differential settlement should not be ruled out unless future inspections reveal no further change in surface elevation or condition.

The combined spillway system is capable of discharging the full PMF and shows no signs of structural or hydraulic deficiency.

- b. Adequacy of Information. The information available from DER and SCS is adequate for a Phase I investigation.
- c. <u>Urgency</u>. The remedial measures recommended in Section 7.2 should be effected as soon as possible.
- d. Necessity for Further Investigation. No further investigations are recommended at this time.

#### 7.2 Recommendations and Proposed Remedial Measures

#### a. Facilities.

- The trees and brush growing on the rockfill embankment slopes should be cut near ground level.
- Low areas along the top of dam should be filled with suitable
  material in order to restore the surface to design elevation. After
  this is completed, the top of dam should be monitored on a monthly
  basis to check for differential settlement.

#### b. Operation and Maintenance Procedures.

 A maintenance program independent of the yearly inspection reports should be developed and implemented. This program should include, but not be limited to, cutting of the brush and trees on a regular basis and periodic inspection and operation of the sluice gate.

2. A warning system should be developed. During periods of heavy rainfall, the dam should be monitored and downstream residents alerted in the event of an impending failure.

#### **APPENDIX**

A

Check List Engineering Data

Design, Construction, Operation

Phase I

CHECK LIST
ENGINEERING DATA
DESIGN, CONSTRUCTION, OPERATION
PHASE I

NAME OF DAM TAYLOR POND
ID # 00315

TEM

AS-BUILT DRAWINGS

REMARKS

Sheet 1 of 4

SET OF AS BUILT PLANS

WERE JOSTAINED FROM SCS.
INCLUDED IN THE
AS BUILT PLANS. SEE
PLATE 1, APPENDIX E.

REGIONAL VICINITY MAP

CONSTRUCTION PROGRESS REPORTS AND PHOTOGRAPHS ARE AVAILABLE FROM POER.

CONSTRUCTION HISTORY

INCLUDED IN DESIGN DRAWINGS AND IN AS BUILT PLANS. SEE PLATES IN APPENDIX E.

TYPICAL SECTIONS OF DAM

SEE PLATES IN APPENDIX E FOR AVAILABLE DRAWINGS.

INCLUDED IN DESIGN CALCULATIONS.

DAG

DISCHARGE RATINGS

CONSTRAINTS

DETAILS

OUTLETS - PLAN

RAINFALL/RESERVOIR RECORDS

ITEN	REMARKS	Sheet 2 of 4
DESIGN REPORTS	INCLUDED IN DESIGN INFORMATION CETAINED FROM SCS.	
GEOLOGY REPORTS	GENERAL GROLOGY GIVEN IN THE "REPORT UPON THE APPLICATION!"	
DESIGN COMPUTATIONS HYDROLOGY & HYDRAULICS UAM STABILITY SEEPAGE STUDIES	THE DESIGNS CALCULATIONS SETAINED FROM SES INCLUDED HYDROLOGY & HYDRAULICS, SLUK STABILITY, AND STRUCTURAL COMPUTATIONS. NO SEEPACE STUDIES WERE PROVIDED.	
MATERIALS INVESTIGATIONS BORING RECORDS LABORATORY FIELD	TRIBUIAL SHEAR DATA, COMPACTION AND PENETRATION RESISTANCE DATA, AND A DISCUSSION OF THE MECHANICS LABORATORY DATA ARE ALL INCLUDED IN THE DESIGN INFURMATION DETAINED TROM SCS.	BORING COLS WIVE INCLUDED IN THE A. FOLT RANS.
POST-CONSTRUCTION SURVEYS OF DAN	SCS AS BUILT SURVEY	

0)

BORRON SOURCES

INCLUBED IN A. GUILT PLANS.

6

Sheet 3 of 4 REMARKS MONITORING SYSTEMS ITEM

NONE .

MODIFICATIONS

NONE .

HIGH POOL RECORDS

NO FECOROS AVAILABLE.

POST COMSTRUCTION ENGINEERING STUDIES AND REPORTS

NONE .

PRIOR ACCIDENTS OR FAILURE OF DAM DESCRIPTION REPORTS

NONE .

MAINTENANCE OPERATION RECORDS

YEARLY INSPECTION REPORTS
LIST THE REGUIRED MAINTENANCE

ON THE DAM.

(0) Sheet 4 of 4 APPENDIY E FOR AVAILABLE SEE PLATES IN DRAM 14363. REMARKS

OPERATING EQUIPMENT PLANS & DETAILS

DETAILS

SECTIONS

SPILLWAY PLAN

TEM

NoNE.

MISCELLANEOUS

**APPENDIX** 

В

Check List

Visual Inspection

Phase I

CHECK LIST VISUAL INSPECTION PHASE I

Sheet 1 of 11

tional 10 # 00315		
National ID #	1	
State PENNA.	у НІСН	Temperature 40°
County PIKE - MONROE	Hazard Category	1978 Weather SUNNY COOL
Name Dam TAYLUR PONO	Type of Dam EARTH AND ROCKFILL	Date(s) Inspection pec.5, 1978 Weather

Tailwater at Time of Inspection ~ 1754 M.S.L. Pool Elevation at Time of Inspection ~1785 M.S.L.

Inspection Personnel:

Recorder DAVID CAMPBELL MR. ROBERT BOWERS MR. THOMAS AHN MR. MR. DAVID CAMPBELL DANA PIZARRO MR. GEORGE ELIAS

Remarks:

MR. FRANK RAZNY THE CARETAKER WAS PRESENT FOR A PORTION OF THE INSPECTION.

# CONCRETE/MASOHRY DAMS

		Sheet 2 of 11
VISUAL EXAMINATION OF	OBSERVAT IONS	REMARKS OR RECOMMENDATIONS
ANY NOTICEABLE SEEPAGE	N/A	
STRUCTURE TO ABUTHENT/EMBANKMENT JUNCTIONS	A/N	
DRAINS	N/A	
MATER PASSAGES	N/A	
FUUIIDATION		

4/2

# CONCRETE/MASONRY DAMS

VISUAL EXAMINATION OF	OBSERVATIONS	Sheet 3 of 11 REMARKS OR RECOMMENDATIONS
SURFACE CRACKS COMCRETE SURFACES	4/N	
STRUCTURAL CRACKING	K/N	
VERTICAL AND HORIZONTAL	M/A	
KJKOLITH JOIKTS	N/A	
CONSTRUCTION JOINTS		

## EHBANKMENT

VISUAL EXAMINATION OF	
SURFACE CRACKS	

NONE OBSERVED.

CRACKING AT OR BEYOND THE TOE	NOME OBSERVED.	
SLOUGHING OR EROSION OF ENBANGIENT AND ABUTHENT SLOPES	NONE OBSERVED.	

A DETAILED SURVEY OF THE CREST IS RECOMMENDED. SOME SMALL ARGAS
OF STANDING WATER INDICATED
LOCALLY DEPRESSED AREAS ALONG
THE CREST. VERTICAL AND HORIZONTAL ALIGNMENT OF THE CREST

RIPRAP FAILURES

NONE OBSERVED.

## EMBANKMENT

VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
PRAINS	SUBMERSED AND WAS NOT INSPECTED. THE GATE VALVE WAS NOT OPERATED.	
JUNCTION OF EMBANKMENT AND ABUTMENT, SPILLWAY AND DAM	AN EARTH DIKE PROTECTS THE EMBANKHENT FROM FLOW THROUGH THE EMERGENCY SPILL- UAY IN THE RIGHT ABUTMENT NREA.	
ANY NOTICEABLE SEEPAGE	RUNNING WATER WAS OBSERVED ALONG THE DOWNSTREAM TOE, IT IS ATTRIBUTED TO SURFACE RUNOFF.	PRESENTS NO APPARENT DANSER
STAFF GAGE AND RECORDER		

NONE .

(PRINCIPAL SPILL WAY)

Sheet 6 of 11 REMARKS OR RECOMMENDATIONS NONE OBSERVED. OBSERVATIONS CRACKING AND SPALLING OF CONCRETE SURFACES IN OUTLET CONDUIT VISUAL EXAMINATION OF

INTAKE STRUCTURE WAS SUBMERGED AND WAS NOT INTAKE STRUCTURE

INSPECTED.

**OUTLET STRUCTURE** 

APPEADED TO BE IN GOOD CONDITION. OUTLET CONDUIT PIPE -

SCOUR BASIN LEADS INTO A 12-FOOT WIDE (AT THE BASE) TRAKEZOIDAL CHANNEL. A TRAPEZOIDAL, RIPRAD LINED OUTLET CHATIFEL

EMERGENCY GATE

POND DRAIN WAS NOT OPERATED. THE SLUICE GATE FOR THE

UNGATED SPILLWAY (EMERGENCY SPILLWAY)

Sheet 7 of 11

VISUAL EXAMINATION OF  CONCRETE WEIR  N/A  APPROACH CHANNEL  A 280- FOOT 4	REMARKS OR R THE EN SPILE WAY EARTH S THE RIG
	W W
CUPTING CHEATE CA	CUPTING CHAINFUL APPENDENCE THE CONTROL SECTION 13 THE CONTROL SECTION 13 THE CONTROL SECTION 250-FOOT WIDE ON A 19, GRADE.  LEVEL SECTION WHICH ACTS AS THE CORTECT SECTION 250-FOOT WIDE CREST.
DISCHARGE CHAIMEL  CHANNEL LEAD  SECTION OF	A 550-FOOT LONG 250-FOOT WIDE CHANNEL LEADS AWAY FROM THE CONTROL SECTION ON A 2.3% GRADE

BRIDGE AND PIERS

# GATED SPILLWAY

		Sheet 8 of 11
VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
CONCRETE SILL	¥/N	
APPROACH CHANNEL		
	<b>₹</b> 2	
DISCHARGE CHANNEL	NIA	
BRIDGE AND PIERS		
	4/2	
GATES AND OPERATION EQUIPMENT		
	2	

# INSTRUMENTATION

VISUAL EXAMINATION	0BSERVATIONS	REMARKS OR RECOMMENDATIONS
MONUMENTATION/SURVEYS	JONE .	
OBSERVATION WELLS		
	MOME.	
WEIRS	NONE.	
PIEZOMETERS	And C.	

NONE.

OTHER

## RESERVOIR

		Sheet 10 of 11
VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
SLOPES	THE SLOPES WIRE	
	RELATIVELY STREP, FAIRLY WELL	
	VECETATED, AND SHOWED NO	
	SIGNS OF PREVIOUS SLOPE	
	FAILUKET.	
SEDIMENTATION	THE PRINCIPAL SPILLURY CREST	
	ELEVATION IS ALSO THE SO-YEAR	
	SEDIMENTATION LEVEL ESTIMATED.	

# DOWNSTREAM CHANNEL

	5	Sheet 11 of
VISUAL EXAMINATION OF	OBSERVATIONS REMARKS OR RECOMMENDATIONS	MENDATIONS
CONDITION (OBSTRUCTIONS, DEBRIS, ETC.)	THE DOWNSTREAM CHANNEL APPEARED TO BE FREE OF DESTRUCT	
	TIONS AND DEBRIS .	

CARACE TO THE TOWN OF	SLOPES	THE CHANNEL CONTINUES
CARACE TO THE TOWN OF		DOWNSTREAM ON A 270
		CRASE TO THE TOWN OF

APPROXIMATE NO. OF HOMES AND	THERE APE APPROXIMATELY
POPULATION	10 HOMES SUBJECT TO DAMAGE
	IN THE TOWN OF LA ANNA, ABOUT
	1/2 MILE BOUNTSTAE AM OF TAYLOR POND DAM.

C

Hydrologic & Hydraulic Data



SUBJECT TAYLUR FONG DAM

### TARK OF CONTENTS APPENDIX C

### HYCROLOGIC & HYCHAULIC DATA

PMP CALCULATIONS	SHEET	1
SNYDER COEFFICIENTS	SHEET	1
SPILLWAY DISCHARGE	SHEFT	2
STAGE - STORAGE	SHEET	3
HEC - 1 DAM SAFETY VERSION		
COMPUTER OUTFUT	Serris	4-9
SCS DESIGN SUMMARY	SHEET	10

UBJECT SHEET BY DATE JOB NO.

#### DISCHARGE AT DAMSITE (FROM SCS DESIGN DATA)

THE PRINCIPAL SPILLMAY WAS DESIGNED TO HAVE AN 18' WEIR CENGTH

(3' x 9' INSIDE DIMENSIONS), BUT WAS CONSTRUCTED WITH ONLY A 16'

WEIR CENGTH (3' x 8 INSIDE DIMENSIONS). ALSO, THE SCS DESIGN

CRITERIUM FOR THE VALUE OF C WAS RHANGED IN JUNE, 1965 (THIS

DAM WAS BUILT IN 1961). THIS, C = 3.4 IN THE DESIGN GUT SHOULD

BE C = 3.1. DISCHARGE DIFFERENTIALS ARE SHOWN BELOW.

WEIR FLOW  $\rightarrow$  AS DESIGNED: Q: CLH 3/2 3.4 (18') (H3/2) = 61.2 H3/2 ACTUAL: Q= CLH 3/2 = 3.1 (1.1) (H3/2) = 49.6 H3/2

PIPE FLOW -> 2 = KAP J2gHP = 24.17 HP 12

STAGE	Hw	Qu (DESIGN)	Qu (ACTUAL)	He	Qe	He/c	QE'S	QTOTAL
1785	0	0	C	31.8	136.3			0
1756	1	61-2	49.6	32.8	138.5			49.6
1787	2	73.2	140.3	33.5	140.7			140.3
1788	3	317.6		34.8	142.6			142.6
1789				35.8	144.3			144.3
1790				36.8	146.7			146.7
1795				41.8	156.4			156.4
1900				46.8	164.8			164.8
1805	•	THE DIFFEREN	MAL WEIR	51.8	176.7			176.7
1810		OW HAS AN IN		56.8	182.8			182.8
1815		ECT ON THE	HYDRAULICS	61.8	193.2			190.2
1920	1 6	F THE DA	n.	66.8	198.2			198.2
1821.6				68.4	200.6	0	0	200.6
/523.3				70.1	202.3	1.7	1259.2	1461.5
524.2				71.0	203.8	2.6	2529.2	2133.0
524.9				11.1	204.7	3.3	3807.0	4011.7
1825.6				72.4	205.7	4.0	5093.2	5299.9
1825.7				73.5	207.1	5.1	1683.0	7890.1
1841.7				74.5	208.6	6.1	10296.0	10504.6
				15.4	210.0	70	12930 0	13140.0

### OBRIEN S GERE

SUBJECT BY CATE JOB NO.

STAGE - STORAGE DATA INPUT TO HEC-1 PROGRAM ASSUMES
50 YEAR SCRIMENTATION LEVEL AS DOES THE DAM DESIGN.
50 YEARS OF SEDIMENT IS SO ACRE-FEET IN VOLUME.

STAGE-STORAGE DATA IS TAKEN FROM SCS DESIGN DATA.

STACE	STORAGE CACHE-FT
1785	
1790	42.0
1800	185.4
1510	441.0
1830	851.4
1830	1458.9

	i			-												1			1	
4				-							•			-	•					
1	1													1000	1920	1				
SHEET	1	1	8			-							1805	1867.1	10501					
	,	•	*				0.05					7	1800	10001	7800					
	; } }	•		-			1.0			•		7	1795	1855.6	4308.0					
	TAYLOR POND DAM	•			NOTE					ROUTING THROUGH TAYLOR POND	1		1790	1854.4	140.7	458.0	1830			
	TAYLOR POND DAM	•	94		RUNOFF TO RESERVOIR	133				DUGH TA	-		1757	1064.6	2733.0					
	1	•	3		RUNOFF	123				TING THE	-		1788	1823.3	145.0		1810		2300	
ø		15	- 9						•	UCH			1841	1821.0	200.3	185.4	1800		1.5	
=2 :	ı	•	• 5		:	- 6	:	0.45		*			1786	1820	0.00	42.0	1790		3.1	
AGE (MEC-1) JULY 1974 25 SEP 78		300	- 6	:				1.73	6.1.			-	1785	1815	100		1785	1785	1829	
2 2	222		7 7		. 7		-		. ,	. 7	-	7	:	:	Ç		. 3	\$\$	3,	
FLOOD HYDROGRAPH PACKAGE (MEC-1) AND SAFETY VERSION LAST MODIFICATION 25 SEP 76			n a •		•	0:	. 21	13		16	11		2		23	32	24	52	26-	
FLOOD DA-SA	-		•						-		1								1	

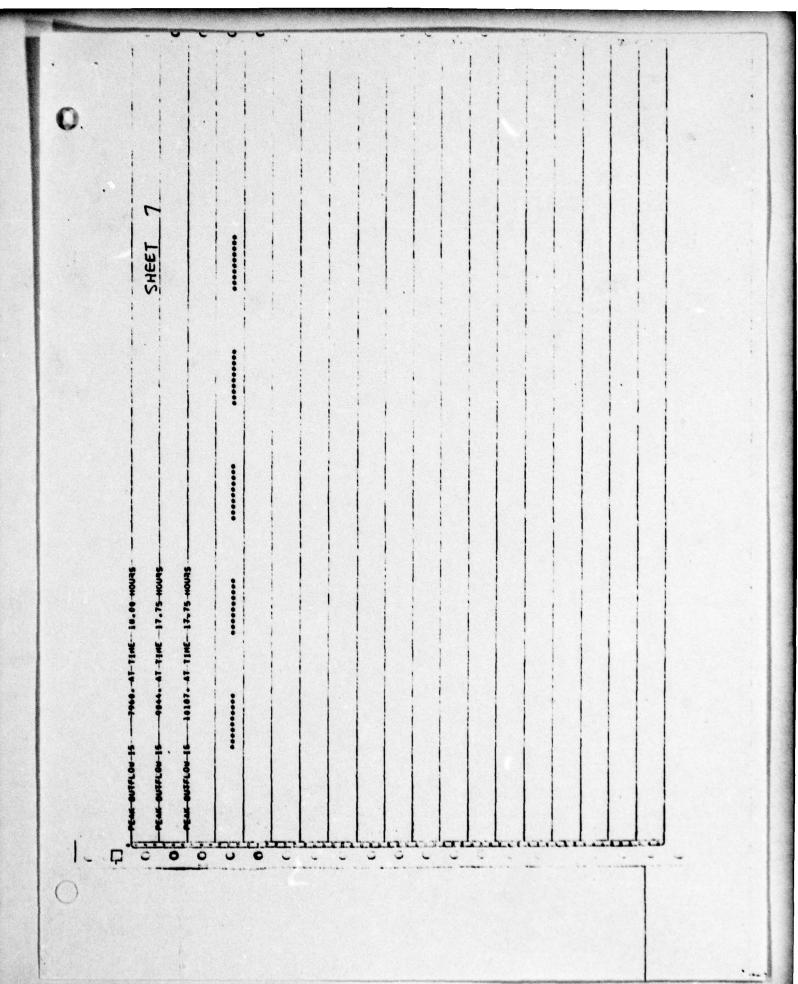
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	C-8:	

SHEET 5	NATIDWAL DAM INSPECTION PROGRAM TAYLOR POND DAM PMF HYDROSRAPH JOS SPECIFICATION 1 DAY IMP IN IN METRC IPLT IPRT NSTAN 1 JOSER NMI LROPI TRACE 5 0 0 0 0	TI-PLAN AN NPLAN 1	SUB-AREA RUNOFF COMPUTATION	ICOMP IECON ITAPE JPLT JPRT INAME ISTAGE IAUTO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PRECIP DATA R12 23.0 111.00 123.00 133.00	RTIOL ERAIN STRKS RTIOK STRTL CNSTL ALSMX RTIMP 1.00 0.00 1.00 1.00 0.00 0.00 0.00 0.00	1	OF-PERIOD ORDINATES. LAG. 1.74 HOURS. CP45 VOL. 1.00
CKAGE (MEC-1) JULY 1978 25 EEP-78	300 MHR M11N	AT105s .20		ISTAO 1A1 1HVD6 IUM6 TAREA	78	OLTER OCT	-01813	UNIT HYDROGRAPH 62 END-OF
FLOOD HYDROGRAPH PACK Daw SAFETY VERSION LAST-MODIFICATION OFFICE OFFICE TIME 04.35.58.					TASPC COMPUTED BY THE PROGRAM IS	LROPT		

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)			1			:			1020.00	131.0.00									
			0 000	266661.		1			1027.70	10504.60									
is	ET 6		1055	1.00			6.	0	1826.70	7890.10									
iż	SHEET		EXCS	23.41 21.55			TAGE —IAUTO	57	-										
;;		:	RAIN		i		INAME15TAGE 1 0	108A 15PRAT	1795.00	156.40-		EXP.							
33.			HR.MN PER100	5				2		146.70		CAREA 0.0	2.						
12							T 1PNP	X TSK	1790.00	***	1459.	0.0 0.0	D DAMWID 5200.						
32			PLON-		OUTING	POND	ATA 1007	0.000 o	1789.00	3.00	1820.	ELEVL 0.0	DAM DATA COOD EXPO						
38			COMP 0 MO.DA		HYDROGRAPH ROUTING	ROUTING THROUGH TAYLOR POND	16CON	AG AMSK4 0 0.000	1788.00	1461.50	1010. 10	EXP.							
			LOSS (		1	ING THROL		MSTOL				3000	T0PEL 1829.0		\$	\$	2	2	ď
3:		•	EXCS			ROUT	157A0 — 1COMP A2 1 CLOSS — AVG	NSTPS - NS	1821.60	200.60	1800.	SPEID 0.0		25.75 HOURS	21.00 HOURS	19.50 HOURS	18.75 HOURS	18.50 HOURS	18.25 HOURS
			RAIN				9L055 CL	SA i	1766.00	198.20	1796.	CREL 1785.0		AT TIME 2	TIME	AT 71ME 1	AT TIME 1	AT TIME 1	AT TIME
*		•	PER100								1785.			198. AT	1366. AT	2999. AT	4390. AT	5646. AT	6827. AT
:		•	HR. MN						1815.00	196.20				15					
			10.0H						STAGE	1013	ELEVATION-			PEAK OUTFLOW IS	PEAK OUTFLOW IS	PEAK OUTFLOW IS	EAK OUTFLOW IS	PEAK BUTFLOW IS	PEAK OUTFLOW IS
		C C	•			1	44	يداد	3	4		<u></u>	حربا	2	5	-		<u></u>	2



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IND OF PERIOD)-SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS IS IN CUBIC PEET PER SECOND (CUBIC METERS PER SECOND) AREA IN SQUARE MILES (SQUARE MILOMETERS)	PATIS 4 PATIS	7216. 9246. 204.321 233.5111 6427. 7960. 193.311 225.4111				
ER SECONDI	7.0045 MATIN 5	13.5 13.5 13.5 13.5 13.5 13.5 13.5 13.5	2			
PLE PLAN-RA IC METERS P KILOMETERS	4 - 4 A T T O . 50	5154. 51 105.9611				
ARY FOR MULTI R SECOND (CUI HILES (SOUARE	847105 -2-84710-	3992. 4123. 1364. 136. 2999. 30.691 04.931				
PERIODI - SUNN CUBIC FEET PE EA IN SOUARE	AT10 -1RATE	2062. 50.30) ( 0.1 198 5.60) ( 30				
35	A - PLAN A					
- FLOW -AND-STORA	7.47.10m	A2 ( 12.43)				
	MARTIN - 51	VORDGRAPH AT			*	

	1828.7								
6	-LOW POINT 1828.7	TIME OF FAILURE HOURS							
SHEET	10P OF DAM	TIME OF HAX OUTFLOW HOURS	25.75 20.00 19.50 18.75	17.75					
ALYSIS		OVER TOP	8888	••••					
IN SAFETY - AMALYSIS	SPILLWAY CREST- 1705.00 0.	MAXIMUM OUTFLOW CFS	198. 1366. 2999. 4390. 5646.	6027 7960 9044 10107					
SUMMARY OF DAM	-INFFFAL - VALUE - 1785.00 0.	STORAGE AC-FT	639. 1044. 1115. 1162. 1201.	1266.					
		MAKENUM- DEPTH OVER DAM							
	ELEVATION STORAGE OUTFLOW	RESERVOIR W.S.ELEV	1619.70 1623.17 1624.35 1825.11		0				
		RATIO OF PWF	99999	06.					
	PLAN -								
ار. <b>ب</b> ا	3 6	<del></del>	6	وغرفوا	عاولي	40	احراجا	المادية	9



Taylor Pond Dam Sign or Date JOB NO

Which	Surface Area Acres	Runoff in Inches	Peak Inflow c.f.s.	Peak Outflow c.f.s.	Elev. Maximum Stage	Storage AcFt.	Element of Structure Determined by Maximum Stage
50-year sediment deposit	8.0	•	· -	-	1785.0	- 51	Crest of reservoir
100-year frequency storm	53.4	•	3402	200.6	1821.6	927.6	Crest of emergency spillway
1.25x6-hour rainfall condition II design storm	I	10.3	8499	6600	1826.2	1200	Design high water
2.50x6-hour rainfall condition II freecoard storm	69.5	19.4 1	5,572	14,580	1829.0	1590	Check top of dam

SCS Hydrologic & Hydraulie Design Summary

D

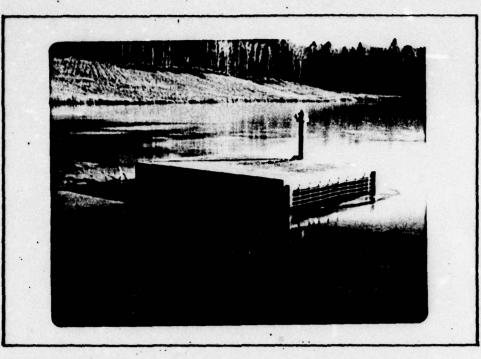
**Photographs** 



VIEW OF THE RESERVOIR SHOWING THE APPROACH CHANNEL TO THE EMERGENCY SPILLWAY IN THE BACKGROUND



UPSTREAM FACE OF THE DAM SHOWING THE OVERGROWN BRUSH



TOP OF THE RISER SHOWING TRASH RACK DETAILS AND THE GATE HOIST



PRINCIPAL SPILLWAY CONDUIT OUTLET AND SCOUR BASIN



EMERGENCY SPILLWAY LOOKING DOWNSTREAM



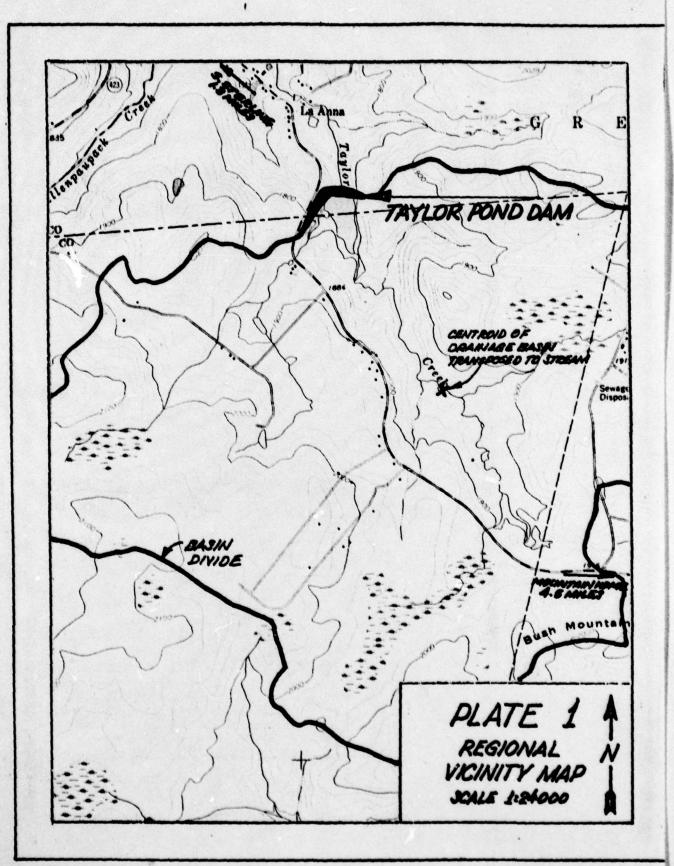
COWNSTREAM EARTH LEVEE ON THE LEFT SIDE OF THE EMERGENCY SPILLWAY LOOKING DOWNSTREAM

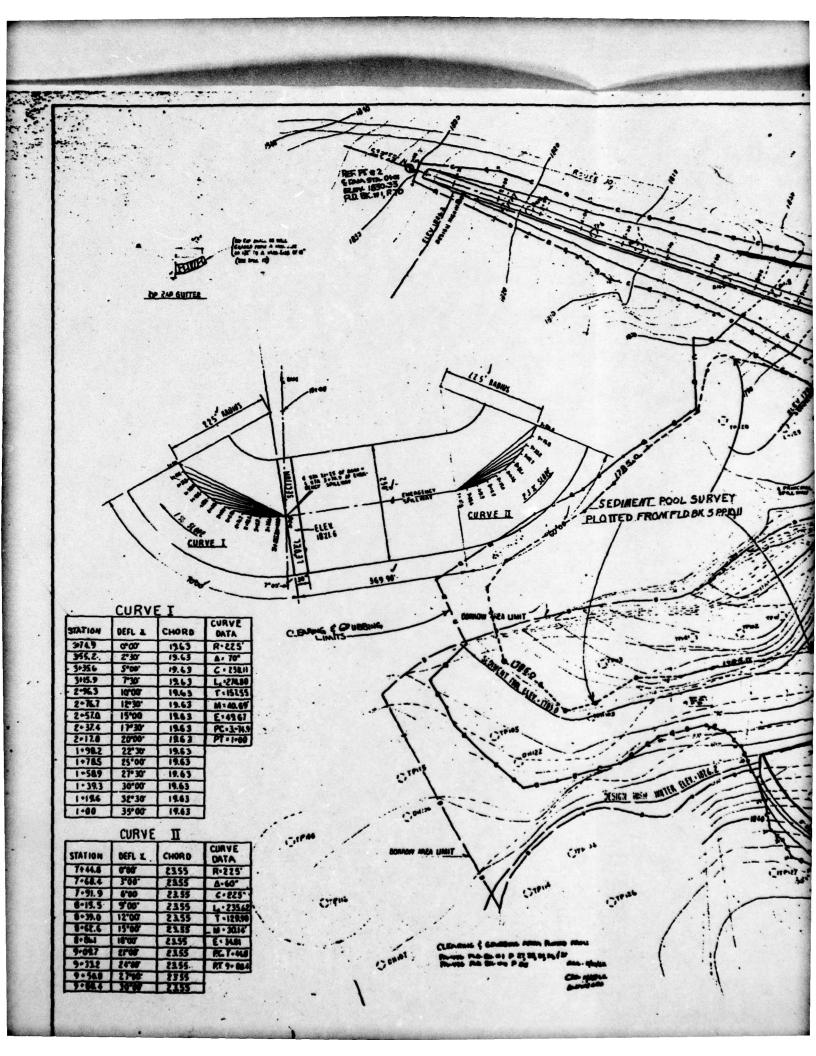
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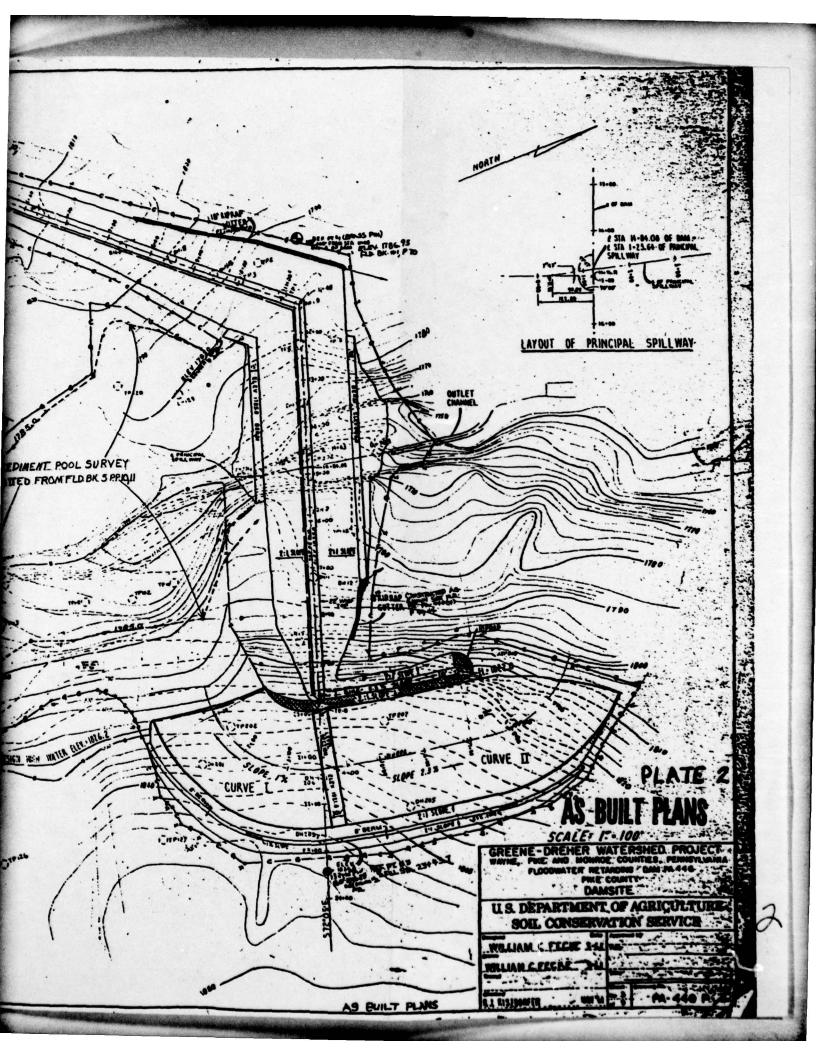
Drawings

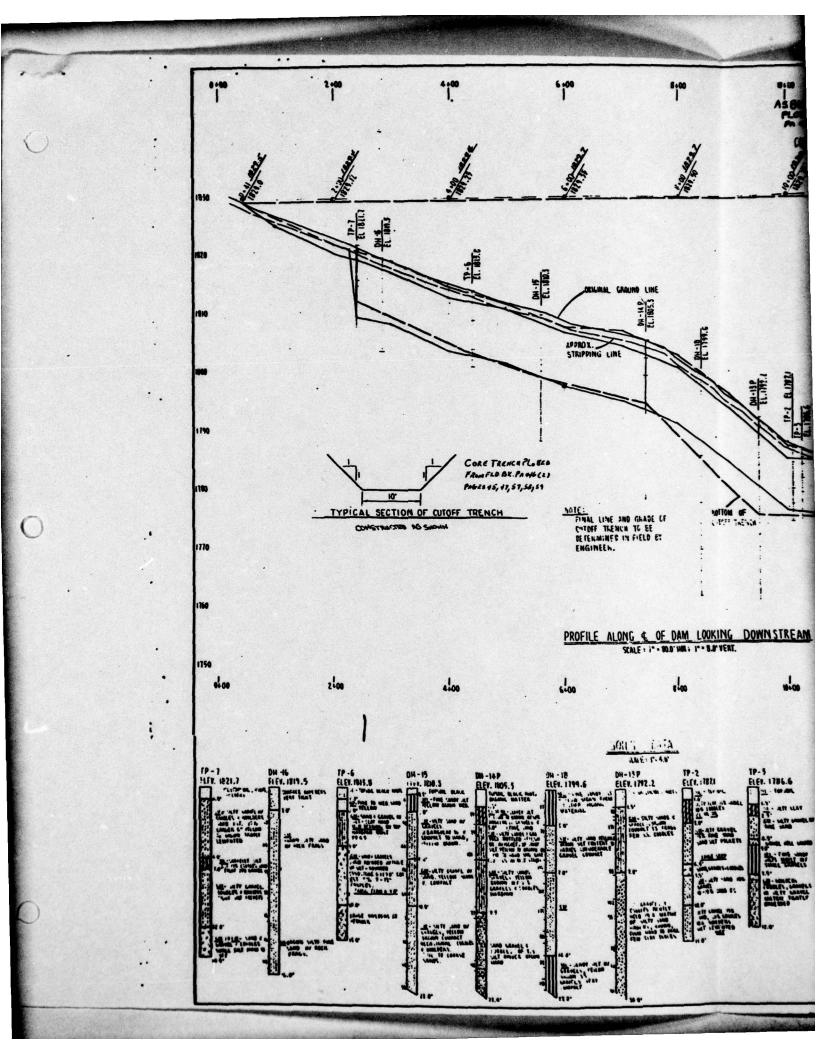
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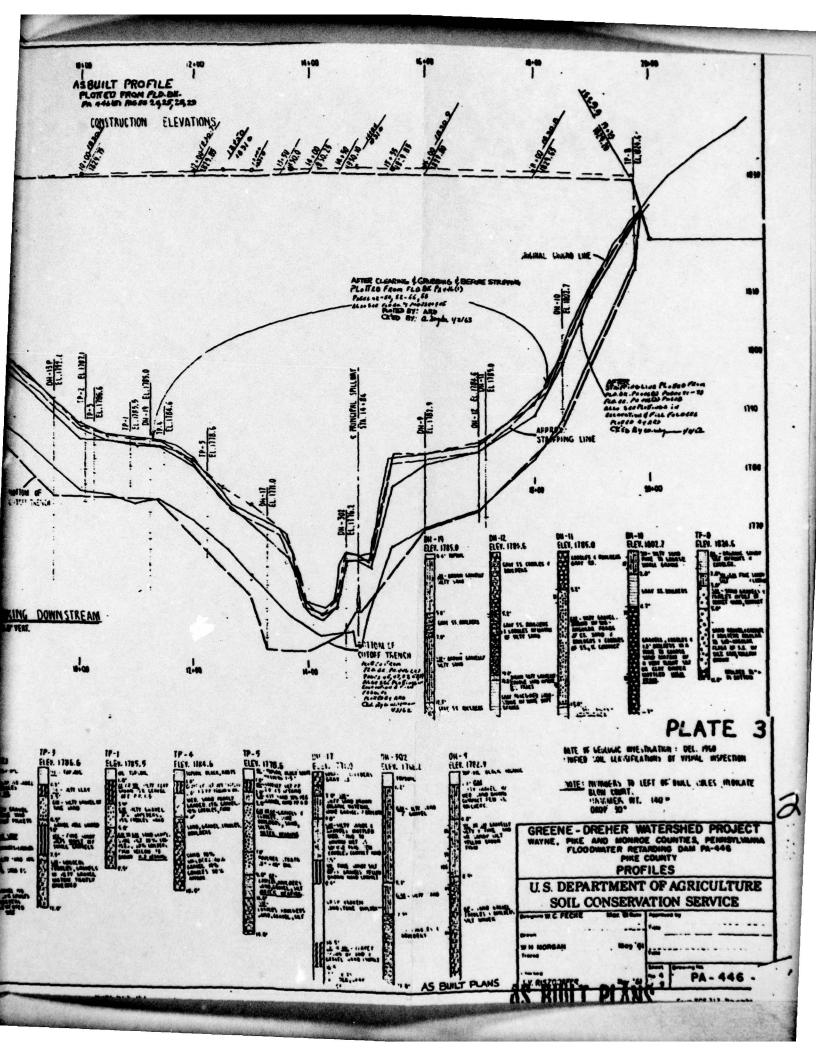
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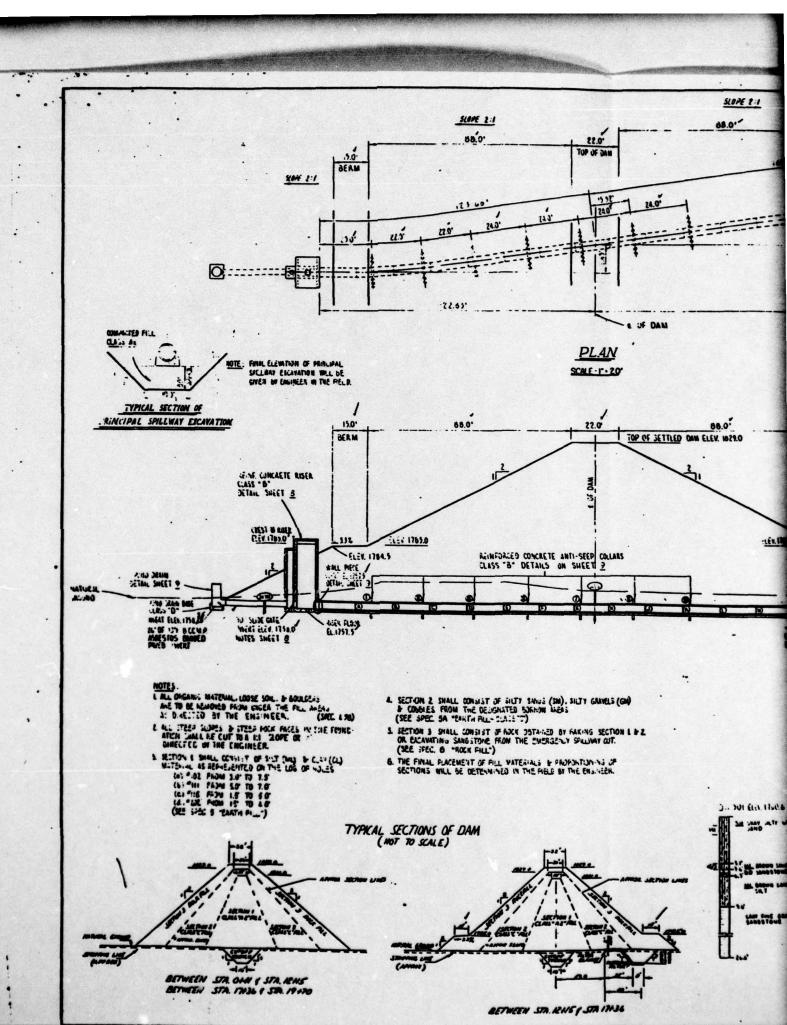


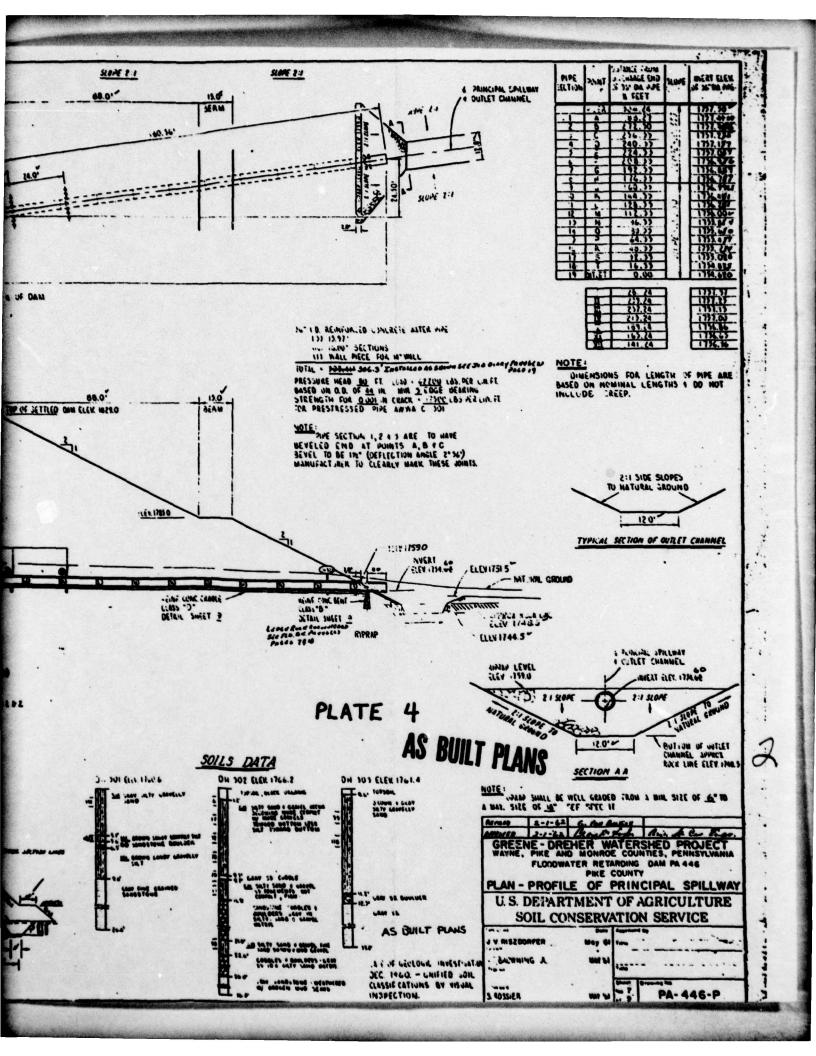


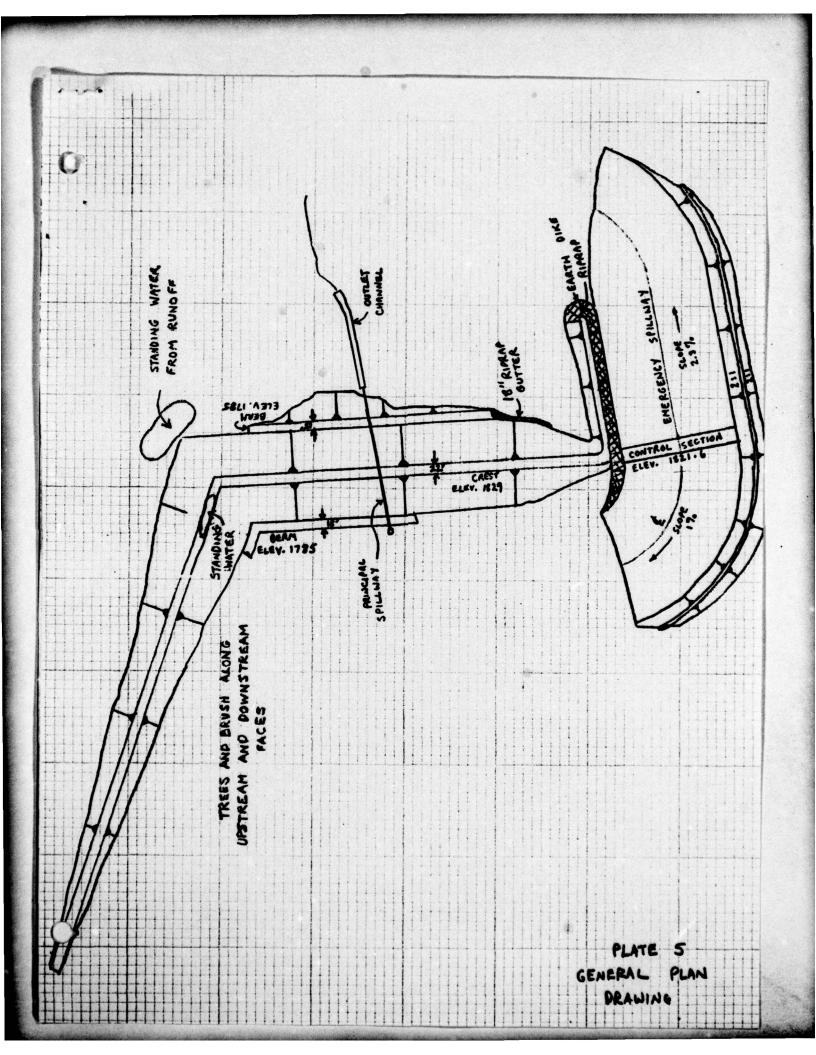








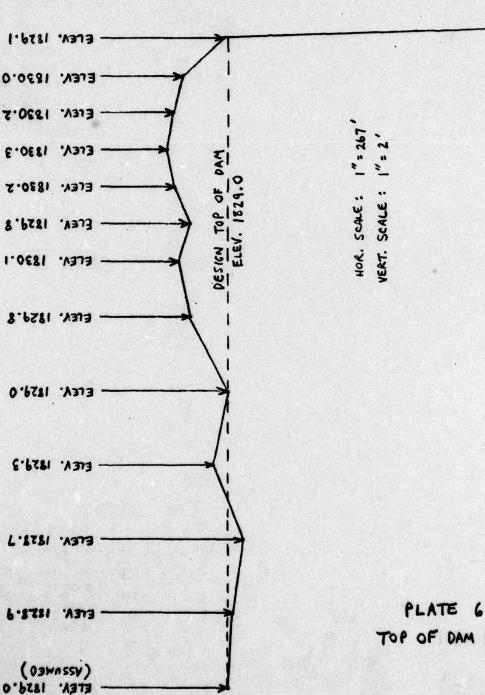




JOB NO. TAYLOR POND DAM

EWERGENCY SPILLUNY

ELEV. 1821.6 (DESIGN)



TOP OF DAM PROFILE

F

Site Geology

#### SITE GEOLOGY

#### TAYLOR POND DAM

Taylor Pond Dam is situated in Pike County and within the limits of the Eastern Glaciated section of the Appalachian Plateau physiographic province. Thick deposits of glacially derived debris and till cover the nearly horizontally bedded, red, gray and green shale and sandstone units of the Devonian Catskill group of marine and continental sediments. The dam and lake both rest on glacial till and ground moraine deposits which are dense, compact and relatively permeable. Sandstone bedrock lies at relatively shallow depths in some portions of the site and was encountered and removed during construction of the emergency spillway.

No known faults or major structural defects occur in the bedrock in the vicinity of the dam and lake.

